



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,825	02/18/2005	Hidetsugu Ikeda	285358US0PCT	1651
22850	7590	06/18/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			EXAMINER	
1940 DUKE STREET				CROUSE, BRETT ALAN
ALEXANDRIA, VA 22314			ART UNIT	PAPER NUMBER
			1774	
			NOTIFICATION DATE	DELIVERY MODE
			06/18/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/524,825	IKEDA ET AL.
	Examiner	Art Unit
	Brett A. Crouse	1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 18 February 0205.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-12 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-12 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>20051209;20051121;20050218</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Specification***

The disclosure is objected to because of the following informalities:

Pages 6 and 21, the formulae are numbered sequentially except that there are two formulae (XI) present. The first occurrence in each case is believed to be a typographical error as formula (IX) is lacking in both cases. For purposes of examination the first occurrence in each case is treated as formula (IX) and the second occurrence in each case is treated as formula (XI).

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 10 recite the limitation "...as a main component." It is unclear as to what constitutes a main component.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Shi et al., EP 1.009,044, hereinafter known as Shi.

Shi teaches:

As to claims 1, 2, 6, 7 and 9:

Paragraph [0010], teaches that is an object of the invention to provide an anthracene derivative of formula (I) for use in the hole transport layer of an electroluminescent device. The passage also recites a multilayer device structure including an anode, cathode, and a plurality of layers in which the anthracene compound of formula (I) is used.

Paragraph [0011], formulae (VI), (VII), (X), (XI), teach derivatives of formula (I) which meet the limitations of general formulae (1) and (2) of claims 1 and 6 of the instant invention. It is noted that formulae (X) and (XI) meet the limitations of formulae (1) and (2) when  $R_3$  is aryl as provided for in the description of formula (1), paragraph [0010]. Additionally, formulae (VI), (VII), (X), and (XI) provide the substituted or unsubstituted naphthalene groups meeting the limitations of claims 2 and 9.

As to claim 8:

Paragraph [0026], provides exemplary compounds 47, 48, 50, 51, 52, 54, 55, 56 and 57, which meet the limitations of claims 1, 2, 6 and 9, for use in the layers of an electroluminescent device.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 4, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al., EP 1,009,044, hereinafter known as Shi as applied to claims 1, 2 and 6-9 above.

The teachings of Shi as in the rejection above are relied upon.

Shi teaches:

Paragraph [0032], teaches a preferred electroluminescent device structure which comprises a hole transport layer, emissive layer, electron transport layer.

Paragraph [0035], teaches that arylamines can be preferably used as dopants in the light emitting layer. The passage additionally teaches that derivatives of anthracene can be preferably used as dopants in the emissive layer. This is held to teach that compounds of formula (I), including compounds of formulae (VI), (VII), (X), and (XI), can be used as dopants in the emissive layer of an electroluminescent device.

Shi does not teach:

Shi does not provide an experimental example of a device having an arylamine or anthracene derivative in the emissive layer. However, Shi does provide examples of the preferred device structure having a hole transport layer, emissive layer, electron transport layer in which the emissive layer comprises a dopant.

It would have been obvious to one of ordinary skill in the art use an anthracene derivative or arylamine compound in the light emissive layer of the preferred device structure of Shi as dopant materials as taught by Shi.

Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al., EP 1.009,044, hereinafter known as Shi as applied to claims 1, 2 and 6-9 above, and further in view of Ikeda et al., JP 2001-097897 hereinafter known as Ikeda.

The teachings of Shi as in the rejection above are relied upon.

Shi does not teach:

Shi does not provide an example of styryl amines as a component in the luminescent layer of an electroluminescent device. However, Shi does teach the use of aryl amines in the luminescent layer of an electroluminescent device.

Ikeda teaches:

Paragraphs [0008]-[0015], teach compounds of general formula (I) for use in electroluminescent devices. Paragraph [0014], section [2], provides a device structure of at least one organic luminous layer inter-electrode, wherein said layer comprises a compound of formula (I). Paragraph [0014], section [5], additionally teaches that the organic luminous layer can additionally comprise a recombination site morphogenetic substance. This is held to teach that the luminous layer can comprise multiple materials such as dopants. Paragraph [0014], section [7], teaches that the luminous layer can comprise a styryl amine as the recombination site morphogenetic substance.

Paragraphs [0018]-[0034], provide an expanded description of compounds embodied by general formula (I). Paragraph [0020], provides groups represented by Ar<sub>1</sub> including anthracene. Paragraph [0024], teaches that at least one of Ar<sub>2</sub> and Ar<sub>3</sub> of general formula (I) is a naphthyl derivative. Paragraphs [0027]-[0028], teach that the naphthyl derivative

Art Unit: 1774

can comprise additional fused rings. Examples are provided in paragraph [0028] and include naphthyl and fluoranthenyl.

Paragraphs [0120]-[0127], examples, teach electroluminescent devices having a compound of formula (I) and a styryl amine having the structure equivalent to a triarylamine with a styryl substituent (PAVB) as a component of the light emitting layer.

It would have been obvious to one of ordinary skill in the art to incorporate a styryl amine, such as (PAVB), as taught by Ikeda and provided in the examples of Ikeda into the device of Shi as component of the light emitting layer with the expectation of success in forming an electroluminescent device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brett A. Crouse whose telephone number is 571-272-6494. The examiner can normally be reached on Monday - Friday 6:00AM - 2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BAC

*Daun Garrett*  
**DAWN GARRETT**  
**PRIMARY EXAMINER**

*6/10/2007*